INDIANA COLLECTION
LAKES

/ / INITIAL SURVEY

/X/ RE-SURVEY

/ / OTHER

LAKE Cedar

COUNTY Lake

BIOLOGIST Bob Robertson

DATE OF SURVEY June 24-27, 1974 DATE OF APPROVAL June 9, 1975

1. QUADRANGLE NAME Cedar lake TWP. 34 N R. 9 W S. 22,23,26,27,34,35

2. NEAREST TOWN Crown Point

3. ACCESSIBILITY - STATE OWNED PUBLIC ACCESS SITE: X
PRIVATELY OWNED PUBLIC ACCESS SITE:
OTHER:

4. SURFACE ACRES 781 MAXIMUM DEPTH 16 (FT.) AVERAGE DEPTH 9 (FT.) ACRE FT. 6,749

5. WATER LEVEL 692.9 ft. (MSL) EXTREME FLUCTUATIONS

6. LOCATION OF BENCHMARK At spillway, elevation 695.83 MSL
Four other inlets are intemittant

7. INLETS:
NAME LOCATION N.W. shore ORIGIN

NAME LOCATION ORIGIN

NAME LOCATION ORIGIN

8. OUTLET:
NAME Cedar creek LOCATION East side

9. WATER LEVEL CONTROL Concrete dam with fixed crest

10.

POOL	ELEVATION (FEET MSL)	ACRES
TOP OF DAM		
TOP OF FLOOD CONTROL POOL		
TOP OF CONSERVATION POOL		
TOP OF MINIMUM POOL		
STREAMBED		

11. BOTTOM TYPE: BOULDER GRAVEL SAND MUCK CLAY MARL

12. WATERSHED USE: Heavily residental with some commercial establishments.
Some areas of marshland, forests, and farms.

13. DEVELOPMENT OF SHORELINE: Heavily residental

HOMES 3,000 app. BOATS MARINAS CAMPS RESORTS 20-30

14. PREVIOUS SURVEYS AND INVESTIGATIONS: Fisheries surveys in 1964, 1969,
1971 Lake mapping 1958.

June 1971
GH:eh

15. SAMPLING EFFORT:

ELECTROFISHING: HOURS 2 TOTAL HOURS 2

GILLNETS: NUMBER 4 HOURS 72 TOTAL HOURS 288

TRAPS: NUMBER _____ HOURS _____ TOTAL HOURS _____

SHORELINE SEINING: NUMBER OF 100 FOOT SEINE HAULS _____

ROTENONE: GALLONS _____ ppm _____ ACRE FEET TREATED _____

PHYSICAL AND CHEMICAL CHARACTERISTICS

16. COLOR Green TURBIDITY 1.5 ft. (SECCHI DISK)

17. TEMPERATURE:

DEPTH	DEGREES F.	DEPTH	DEGREES F.
SURFACE	66.5	40	
2	66.5	42	
4	66.5	44	
6	66.5	46	
8	66.5	48	
10	66.0	50	
12	66.0	52	
14	66.0	54	
16	66.0	56	
18		58	
20		60	
22		62	
24		64	
26		66	
28		68	
30		70	
32		72	
34		74	
36		76	
38		78	

18. D.O. - TOTAL ALKALINITY - pH :

DEPTH	D.O.	TOTAL ALKALINITY	pH
SURFACE	13	119	9.5
5	13		
10	12		
15	9	170	9.0
20			
25			
30			
35			
40			

* Limits of thermocline:

BIOLOGICAL CHARACTERISTICS:

19. COMMON SPECIES OF AQUATIC PLANTS AND PERCENT SURFACE AREA COVERED

COMMON NAME	SCIENTIFIC NAME	AREA OF LAKE FOUND IN	DEPTH FOUND	PER CENT COVERED
Emergent				
Spatterdock	Nuphar advena	Scattered	0-3	Minimal
Submersed				
Eel grass	Vallisneria americana	Scattered		Minimal
Algal bloom	Aphanizomenon	Entire lake at times		Extensive at time

COMMENTS Aquatic vegetation (with the exception of algae) is not a problem at present. Extensive algae blooms are common and were present at the time of the survey.

FISHES

20. SPECIES AND RELATIVE ABUNDANCE

COMMON NAME	SCIENTIFIC NAME	NUMBER	PERCENTAGE
Gizzard shad	Dorosoma cepedianum	807	79.5
Carp	Cyprinus carpio	105	10.3
Brown bullhead	Ictalurus nebulosus	39	3.8
Northern pike	Esox lucius	21	2.1
Channel catfish	Ictalurus punctatus	15	1.5
Gold fish	Carassius auratus	15	1.5
Black bullhead	Ictalurus melas	4	.4
Black crappie	Pomoxis nigromaculatus	4	.4
Bluegill	Lepomis macrochirus	3	.3
Largemouth bass	Micropterus salmoides	2	.2
Total		1015	

21. NUMBER, PERCENTAGE, WEIGHT, CONDITION AND AGE OF Gizzard shad

TOTAL LENGTH (inches)	NUMBER	PERCENTAGE	AVE. WEIGHT (pounds)	CONDITION FACTOR(k)	AGE
5.0	20	2.5			
5.5	45	5.6			
7.5	55	6.8			
8.0	170	21.1			
8.5	270	33.4			
9.0	115	14.2			
9.5	11	1.4			
10.5	5	.6			
11.0	30	3.7			
11.5	20	2.5			
12.0	30	3.7			
12.5	25	3.1			
13.0	11	1.4			
Totals	807	100			

Condition_____

Age-Growth_____

% catchable_____

21. NUMBER, PERCENTAGE, WEIGHT, CONDITION AND AGE OF Carp

TOTAL LENGTH (inches)	NUMBER	PERCENTAGE	AVE. WEIGHT (pounds)	CONDITION FACTOR(k)	AGE
6.5	7	6.6			
7.0	2	1.9			
7.5	8	7.6			
8.0	19	18.0			
8.5	30	28.5			
9.0	9	8.5			
9.5	8	7.6			
10.0	5	4.7			
10.5	2	1.9			
11.0	1	.9			
14.5	1	.9			
16.0	1	.9			
17.0	1	.9			
18.0	2	1.9			
19.0	4	3.8			

Condition_____

Age-Growth_____

% catchable_____

21. NUMBER, PERCENTAGE, WEIGHT, CONDITION AND AGE OF Carp (continued)

TOTAL LENGTH (inches)	NUMBER	PERCENTAGE	AVE. WEIGHT (pounds)	CONDITION FACTOR(k)	AGE
19.5	2	1.9			
21.0	1	.9			
23.0	1	.9			
25.0	1	.9			
	105				

Condition_____

Age-Growth_____

% catchable_____

21. NUMBER, PERCENTAGE, WEIGHT, CONDITION AND AGE OF Brown bullhead

TOTAL LENGTH (inches)	NUMBER	PERCENTAGE	AVE. WEIGHT (pounds)	CONDITION FACTOR(k)	AGE
5.0	1	2.5			
5.5	1	2.5			
6.0	1	2.5			
7.5	3	7.6			
8.0	2	5.1			
8.5	1	2.5			
9.0	2	5.1			
9.5	2	5.1			
10.0	7	17.9			
10.5	6	15.3			
11.0	1	2.5			
11.5	5	12.8			
12.0	2	5.1			
12.5	2	5.1			
13.0	2	51.			
13.5	1	2.5			

Condition ---

Age-Growth ---

% catchable 76.9

21. NUMBER, PERCENTAGE, WEIGHT, CONDITION AND AGE OF Northern pike

TOTAL LENGTH (inches)	NUMBER	PERCENTAGE	AVE. WEIGHT (pounds)	CONDITION FACTOR(k)	AGE
19.5	1	4.7	1.65	2.2	II+
20.0	1	4.7	1.75	2.2	II+
20.5	1	4.7	1.83	2.1	II+
21.0	2	9.5	2.34	2.5	II+
21.5	2	9.5	2.13	2.1	II+
22.0	5	23.8	2.47	2.3	II+
22.5	2	9.5	2.91	2.6	II+
23.0	1	4.7	3.15	2.6	
23.5	1	4.7	2.70	2.1	
24.0	2	9.5	3.45	2.5	II+
24.5	1	4.7	3.97	2.7	II+
25.0	1	4.7	3.65	2.4	II+
26.5	1	4.7	4.61	2.6	II+
	21				

Condition Above average

Age-Growth Above average

% catchable 95.3

21. NUMBER, PERCENTAGE, WEIGHT, CONDITION AND AGE OF Channel catfish

TOTAL LENGTH (inches)	NUMBER	PERCENTAGE	AVE. WEIGHT (pounds)	CONDITION FACTOR(k)	AGE
6.0	1	6.6	.06	2.8	
11.5	1	6.6	.57	3.6	
12.0	1	6.6	.55	3.2	
12.5	1	6.6	.57	2.9	
13.0	2	13.3	.65	3.0	
13.5	5	33.3	.73	2.9	
14.0	2	13.3	.92	3.3	
14.5	1	6.6	1.20	3.9	
15.0	1	6.6	1.03	3.1	
	15				

Condition_____

Age-Growth_____

% catchable_____

21. NUMBER, PERCENTAGE, WEIGHT, CONDITION AND AGE OF Black crappie

TOTAL LENGTH (inches)	NUMBER	PERCENTAGE	AVE. WEIGHT (pounds)	CONDITION FACTOR(k)	AGE
4.5	1	25.0	.07	7.6	I+
5.0	1	25.0	.09	7.1	I+
5.5	1	25.0	.12	7.2	I+
6.5	1	25.0	.19	7.0	II+
	4	100			

Condition Above average

Age-Growth Average

% catchable 0

21. NUMBER, PERCENTAGE, WEIGHT, CONDITION AND AGE OF Bluegill

TOTAL LENGTH (inches)	NUMBER	PERCENTAGE	AVE. WEIGHT (pounds)	CONDITION FACTOR(k)	AGE
3.0	1	33.3	.02	7.4	I+
5.5	2	66.7	.15	9.0	III IV+
	3	100			

Condition Above average

Age-Growth Average

% catchable 66.7

LAKE COUNTY PUBLIC LIBRARY

21. NUMBER, PERCENTAGE, WEIGHT, CONDITION AND AGE OF Largemouth bass

TOTAL LENGTH (inches)	NUMBER	PERCENTAGE	AVE. WEIGHT (pounds)	CONDITION FACTOR(k)	AGE
15.0	1	50	1.86	5.5	III+
15.0	1	50	1.67	5.0	IV+

Condition Average

Age-Growth Above average

% catchable 100

22. MEAN CALCULATED LENGTH IN INCHES AT LAST ANNULUS FORMATION

SPECIES	AGE GROUPS I	II	III	IV	V	VI
Northern pike	( )	19.3 (13)	( )	( )	( )	( )
Black crappie	3.1 (1)	5.6 (1)	( )	( )	( )	( )
Bluegill	1.8 (1)	( )	4.9 (1)	4.5 (1)	( )	( )
Largemouth bass	( )	( )	13.9 (1)	13.6 (1)	( )	( )
	( )	( )	( )	( )	( )	( )
	( )	( )	( )	( )	( )	( )

23. FALL SEINE SAMPLING

SPECIES	NUMBER	SIZE RANGE (inches)

24. FISH PARASITES AND DISEASES Lernaea was found on some of the crappie, bluegill and bass.

25. EVIDENCE OF EROSION OR POLLUTION The lake still has occasional high bacteria counts and is generally covered by algae blooms during the summer.

Fish Management Report

CEDAR LAKE

Lake County

Cedar Lake is a 781 acre natural lake located in Lake County in the extreme northwest corner of Indiana. Since the late 1940's, the lake has had a history of high bacterial counts and heavy algal blooms. Periodically the lake has been closed to swimming due to high bacterial counts.

The lake was originally surveyed in 1964 in an effort to provide information which along with a report by the U.S. Public Health Service and the Indiana Stream Pollution Control Board would be useful in formulating future plans for the lake and surrounding area. The fish population in 1964 was found to be undesirable and the lake was renovated in the fall of 1966. Additional surveys were conducted in 1969 and 1971.

The present survey was conducted on June 24-27, 1974. A total of 1,015 fish were collected representing ten species. Relative abundance of these fish was as follows: Gizzard shad 79.5%, carp 10.3%, brown bullhead 3.8%, northern pike 2.1%, channel catfish 1.5%, goldfish 1.5%, black bullhead .4%, black crappie .4%, bluegill .3%, and largemouth bass .2%. Northern pike, channel catfish, and goldfish were not collected in the 1971 survey although they had been found in 1969. In addition, yellow bullhead, white crappie, and white sucker had been recorded in 1971 but were not found in the 1974 survey.

Gizzard shad and carp now comprise almost 90% of the fish population by number, shad have increased from 11.3% in 1971 to

79.5%. Carp have decreased in abundance from 59.6% in 1971 to a present 10.3%. Apparently the many young-of-the-year carp observed in 1971 did not survive in sufficient numbers to maintain this species dominance. The shad collected ranged in size from 5.0 to 13.0 inches and the size range of carp was from 6.5 to 21.0 inches. Most carp were 8.5 inches in length.

The bullhead populations (both brown and black) have remained at about the same level of abundance. Most of these fish are large enough to be harvested by the fisherman.

Twenty-one northern pike were taken ranging in size from 19.5 to 25.0 inches. All of these fish were two years old. Since no record exists of a recent stocking of pike it appears that a naturally reproducing population may have developed from the few adult pike stocked following the renovation in 1966. The growth and condition (relative plumpness) of the pike were above average.

Fifteen channel catfish ranging in size from 6.0 inches to 15.0 inches were collected. This fish was not collected in 1971 although thirteen were collected in the 1969 survey.

The crappie, bass, and bluegill populations made up about 1% of the total population. Despite their rarity, these fish were average or above in both condition and growth. Only two bass were taken and both of these fish were 15.0 inches long.

Since the 1966 renovation, the fish population of Cedar Lake has been in a constant state of change. Bass and other members of the sunfish family have failed to maintain populations that could be considered important anglers. Shad and carp have expanded and now dominate the lake. Presently the bullhead

population and the apparently growing population of northern pike and channel catfish are the only species important to most fishermen.

It is believed that the greatly "enriched" water that produces heavy algal blooms and the parasitic copepod are factors that have detrimentally effected the fish population. It is likely that as long as poor water quality exists that any future renovation will result in a fish population similar to the present one. In clear lakes, even when rough fish are present, their numbers are usually held in check, and they do not become dominant in the fishery.

As the fertility of a lake increases so does the turbidity of the water, and the likelyhood of plankton and filter feeding fish increasing in abundance becomes much greater.

The town of Cedar Lake is presently completing a sewage system that should do much to improve the water quality of the lake. In the meantime it is possible that the pike population may help control the shad and eliminate the need for another total renovation. The pike along with an expanding channel catfish population seem to be uneffected by the Lernea and may prove to be sufficient in size and numbers to maintain sport fishing interest in the lake.

It is recommended that the lake be re-surveyed when the sewage treatment plant is completed. If no improvement has occured in the fish population by that time, and if water quality is judged adequate, a total renovation will be recommended.

It is recommended that a barrier be placed between Cedar and Dale Carlia to prevent the movement of fish between these two lakes.

Submitted by: Bob Robertson
Fishery Biologist

Approved by: Gary E. Hudson
Regional Fishery Supervisor

Approved by: Robert W. Hollingsworth
Chief of Fisheries

Date: June 9, 1975